

Claims

1. A device for damping water hammer in hydraulic accumulators, piston-type accumulators in particular, a device which is a component of the accumulator and which acts as a throttle on the flow of fluid which is established between parts of the interior (12) of the accumulator and a hydraulic network (14) to which the accumulator may be connected, the throttle being formed by at least one transfer area (24) of specifiable cross-section in a valve component (16) which when in one of its valve positions interrupts the flow of fluid up to the respective transfer area (24) and when in its other valve position essentially releases the flow, characterized in that the respective transfer area (24) is provided with a funnel-shaped enlargement (26; 28) on at least one of its free ends and in that the enlargement (26; 28) is oriented in the direction of the interior (12) of the accumulator or of the hydraulic network (14).
2. The damping device as claimed in claim 1, wherein the respective transfer area (24) is in the form of a central channel in the valve component (16) and wherein the funnel-shaped enlargement (26; 28) is present on both ends of the central channel.
3. The damping device as claimed in claim 1 or 2, wherein the valve component (16) is configured as a valve piston having web-like extensions (30) on one of its ends.
4. The damping device as claimed in claim 3, wherein the valve component (16) is guided on the outer circumference side by cylindrical guide surfaces (34) along a housing (18) by which the valve component (16) may be fastened on one end of the housing (10) of the accumulator.

5. The damping device as claimed in claim 4, wherein the valve component (16) is provided on the outer circumference side and between the extension webs (30) with level surfaces (44) which, in conjunction with the cylindrical inner circumferential surface (36) of the valve housing (18), delimit fluid outlets (46).
6. The damping device as claimed in claim 4 or 5, wherein the valve component (16) is provided on the end side with level sealing surfaces (38, 40), the sealing surface (38) of which may be brought into contact with an also level contact surface (42) of the valve housing (18) or the surface which adjoins the web-like extensions (30).
7. The damping device as claimed in one of claims 3 to 6, wherein the partial structural length of the valve component (16) with the transfer area (24) amounts to more than one half of the total structural length of the valve component (16) with the extension webs (30).
8. The damping device as claimed in one of claims 2 to 7, wherein the funnel-shaped enlargements (26, 28) extend from the valve component (16) along level sealing surfaces (38, 40).
9. The damping device as claimed in one of claims 4 to 8, wherein the valve housing (18) is provided on the outer circumference side with threading (20) for fastening to parts of the accumulator housing (10).